

**CLAIMS**

**What is claimed is:**

1. A yarn suitable to provide arc and flame protection
- 5 comprising:
  - (a) 40 to 75 weight percent modacrylic fiber,
  - (b) 10 to 40 weight percent cotton fiber and
  - (c) 1 to 40 weight percent aramid fiber,  
said percentages on the basis of components (a), (b) and (c).
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2. The yarn of claim 1 comprising:
  - (a) 45 to 60 weight percent modacrylic fiber
  - (b) 15 to 35 weight percent cotton fiber and
  - (c) 5 to 30 weight percent aramid fiber.
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3. The yarn of claim 1 where the fiber includes both para-and meta-aramid fiber.
4. The yarn of claim 3 wherein the para-aramid fiber is present
- 20 in a range from 20 to 40 weight percent and the meta-aramid fiber is present in a range from 60 to 80 weight percent on a basis of total aramid fiber.
5. The yarn of claim 4 wherein the para-aramid fiber is present
- 25 in a range from 25 to 35 weight percent and the meta-aramid fiber is present in a range from 65 to 75 weight percent.
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6. The yarn of claim 5 which additionally contains an anti-static component.
7. The yarn of claim 6 wherein the anti-static component is carbon or metal.

8. The yarn of claim 7 wherein the anti-static component is carbon.

5 9. The yarn of claim 1 which additionally contains an anti-static component.

10 10. The yarn of claim 9 wherein the anti-static component is carbon.

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11. A fabric suitable to provide an arc and thermal protection comprising:

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- (a) 40 to 75 weight percent modacrylic fiber,
- (b) 10 to 40 weight percent cotton fiber and
- (c) 1 to 40 weight percent aramid fiber,  
said percentages on the basis of components (a), (b) and (c).

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12. The fabric of claim 11 comprising:

- (a) 45 to 60 weight percent modacrylic fiber
- (b) 15 to 35 weight percent cotton fiber and
- (c) 5 to 30 weight percent aramid fiber.

25 13. The fabric of claim 11 wherein the char length according to ASTM D-6413-99 is less than 6 inches.

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14. The fabric of claim 11 wherein the char length according to ASTM D-6413-99 is less than 4.5 inches.

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15. The fabric of claim 11 wherein the fabric includes fibers of

para- and meta-aramid.

16. The fabric of claim 15 wherein para-aramid fiber is present in a range from 20 to 40 weight percent and meta-aramid fiber is present in a range from 60 to 80 weight percent on a basis of total aramid fiber.

17. The fabric of claim 16 wherein the para-aramid fiber is present in a range from 25 to 35 weight percent and the meta-aramid fiber is present in a range from 65 to 75 weight percent.

5 18. The fabric of claim 11 which additionally contains an anti-static component.

10 19. A garment suitable to provide arc and thermal protection:  
(a) 40 to 75 weight percent modacrylic fiber,  
(b) 10 to 40 weight percent cotton fiber and  
(c) 1 to 40 weight percent aramid fiber,  
said percentages on the basis of components (a) (b) and (c).

15 20. The garment of claim 16 comprising:  
(a) 45 to 60 weight percent modacrylic fiber  
(b) 15 to 35 weight percent cotton fiber and  
(c) 5 to 30 weight percent aramid fiber.

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